information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals.--

--9. The integrated circuit sensor of claim 8, wherein said output stage comprises means for generating said encoded output signal using pulse width modulation, wherein said state information is encoded within said encoded output signal based upon the pulse/pause ration of said encoded output signal.--

--10. The integrated circuit sensor of claim 8, comprising:

a magnetic field transducer that generates and provides said input signal.--

--11. The integrated circuit sensor of claim 10, wherein said magnetic field transducer comprises a Hall effect transducer.--

--12. The integrated circuit sensor of claim 11, comprising a control unit that includes a memory device that stores and provides said plurality of predetermined threshold values.--

--13. The integrated circuit sensor of claim 12, wherein said memory device comprises a read/write memory device that allows said plurality of predetermined threshold values.--

--14. The integrated circuit sensor of claim 12, comprising

means for reading updated predetermined threshold values that are input to said integrated

circuit sensor through said bi-directional integrated circuit lead that also receives said encoded output signal, and for storing said updated predetermined threshold values in said memory device, which provides said updated predetermined threshold values to said comparator for comparison against said input signal.--

--15. The integrated circuit sensor of claim 12, wherein said an output stage receives said plurality of comparator output signals and encodes state information associated with said plurality of comparator output signals to provide an encoded output signal indicative of said state information associated with said plurality of comparator signals.--

--16. An integrated circuit sensor, comprising:

a transducer element that provides a transducer output signal;

a comparator that receives said transducer output signal, and compares a signal indicative of said transducer output signal against a plurality of adjustable threshold values and provides a plurality of comparator output signals each indicative of one of an associated plurality of switching states; and

an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide on a bi-directional integrated circuit lead an encoded output signal indicative of said state information associated with said plurality of comparator signals.--

--17. The integrated circuit sensor of claim 16, wherein said output stage comprises means for generating said encoded output signal using pulse width modulation, wherein said state information

is encoded within said encoded output signal based upon the pulse/pause ration of said encoded output signal.--

--18. The integrated circuit sensor of claim 16, wherein said transducer element comprises a magnetic field transducer that generates and provides said transducer output signal.--

--19. The integrated circuit sensor of claim 16, wherein said comparator comprises hystersis on each predetermined threshold values.--

--20. An integrated circuit sensor, comprising:

a transducer element that provides a transducer output signal;

an amplifier that receives said transducer output signal and provides an amplified transducer output signal;

a comparator network that receives said amplified transducer output signal, and compares a signal indicative of said amplified transducer output signal against a plurality of adjustable threshold values to determine a state of said amplified transducer output signal, and provides a plurality of comparator output signals indicative of said state of said amplified transducer output signal; and

an output stage that receives said plurality of comparator output signals and encodes switching state information associated with said plurality of comparator output signals to provide on a integrated circuit lead an encoded output signal indicative of said state.--